**SUMMARY OF HAILE MINE GEOLOGY**

The Haile Gold Mine is located within the Carolina slate belt in northern South Carolina. Gold production occurred within the Carolina slate belt from 1800 until 1999. Three of the most significant historic producers are located along a 40 mile trend, with the Haile Mine at the center. The nearby Ridgeway Mine (SW of Haile) produced 1.5 million ounces of gold and the Brewer Mine (NE of Haile) produced 216,000 ounces of gold. The Haile Mine has produced 368,000 ounces of gold since its discovery in 1827. Romarco has delineated a measured and indicated resource of 4.0 million ounces and an inferred resource of 0.8 million ounces of gold at Haile.

The Carolina slate belt, extending from Virginia to Georgia is an ancient island arc system that formed adjacent to ancient Africa and was attached to North America during the Paleozoic. The Carolina slate belt is bordered to the northwest by the Charlotte belt and to the southeast by the Kiokee belt. All of these belts were part of the same island arc terrane. Rocks within the Carolina slate belt range in age from 650 to 500 million years old. It is believed that the Charlotte belt represents deeper crustal levels of the island arc system and the Kiokee belt contains Carolina slate belt rocks that were intensely deformed when Africa collided with North America. The Carolina slate belt consists of volcanic and sedimentary rocks that were subjected to greenschist facies metamorphism during the Paleozoic.

The volcanic and volcanic derived sedimentary rocks in South Carolina are known as the Persimmon Fork Formation and at Haile range in age from 551 to 555 million years old. The Persimmon Fork Formation is composed of poorly sorted, poorly stratified, felsic to intermediate crystal-lapilli tuffs or volcanogenic derived sediments containing variable amounts of quartz, albite, white mica, chlorite, biotite, and carbonate. A sequence of thinly bedded siltstone and mudstone with wacke, quartz arenite, arkose, and conglomerate lenses is regionally known as the Richtex Formation. The Richtex Formation contains quartz, white mica, chlorite, biotite, and carbonates. The contact between the Persimmon Fork and Richtex Formations within the mine area varies from gradational to sharp.

At Haile the Persimmon Fork and Richtex Formation were tightly to isoclinally folded during deformation and greenschist facies metamorphism. As a result, the Persimmon Fork Formation contains variably developed foliation that is often more pronounced near contacts. The Richtex Formation contains penetrative foliation that is usually axial planar to folding. The foliation usually trends northeast-southwest and dips moderately to the northwest. Local ductile shear textures are present within both units, but extensive zones of shearing are not observed in core samples. Post metamorphic, brittle fault zones are also rarely encountered in the drill core.

Post-kinematic granites intruded the Carolina slate belt during the Carboniferous period and are located to the west and northeast of the mine. Contact metamorphism occurred adjacent to these granites. Post-metamorphic, felsic and intermediate dikes of Carboniferous age are found within the mine area and have been mapped at various orientations. Mesozoic-aged, diabase dikes intrude the Haile area rocks and trend northwest-southeast and are usually sub-vertical. The diabase dikes sometimes intrude through the mineralized zones but typically do not offset them. Deep, saprolitic weathering of the bedrock significantly altered the original composition and textures of the rocks. The saprolite consists of kaolinite, quartz, and iron oxides. The intense weathering was followed by deposition of poorly sorted, poorly lithified sands above the saprolite during the Cretaceous.

Gold mineralization is typically found within the Richtex Formation at or near the contact with the Persimmon Fork Formation. All of the major deposits within the district are proximal to this boundary. Gold is found in stratabound, silicified lenses of hydrothermally altered metasediments. The silicified zones have variable thickness and can consist of broad zones of disseminated mineralization. Textural evidence indicates that the silicification, as well as brecciation occurred after the deposition of the sediments. Brecciated zones consist of angular jigsaw-fit clasts in a quartz matrix. Stockwork style quartz-pyrite-pyrrhotite veining is observed within some of the silicified zones. Folded stockwork veins, folded sulfide zones, and pressure shadows around mineralized pyrite grains indicate that the gold mineralization is older than the latest deformation.

Pyrite abundances within the mineralized zones can range from 1% to 80%, but more commonly are between 2 and 15%. Molybdenite is also associated with the gold zones and has been dated using rhenium-osmium isotopes that yield ages close to the depositional age of the host rocks. Elements associated with the gold mineralization include Ag, As, Mo and Te with slightly elevated Cu and Zn. Electrum and telluride minerals occur along fractures and as inclusions within pyrite. Chalcopyrite, sphalerite, arsenopyrite and galena are also present in vey minor quantities within the gold mineralized zones.

The gold mineralization at Haile is related to the island arc setting that hosts the deposit. The lack of bimodal volcanic activity and low abundances of base metals suggest that the mineralization is not a gold-rich volcanogenic massive sulfide deposit. The post-depositional silicification of the sediments does not support a sedimentary exhalative model either. Instead, the presence of molybdenite and tellurides along with the spatial association of the deposit to volcanogenic rocks indicate a genetic link to arc related igneous activity. Subsequent deformation during arc accretion modified the original geometry of the Haile deposit. The extensive and uniform nature of the gold mineralization and alteration suggest that the gold mineralizing system was large and robust. The diffuse and widespread nature of the alteration and gold mineralization indicate epithermal styled mineralization.